



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

J&J Docket No. **DEP5256USNP**

MMB Docket No. **1671-0298**

Confirmation No.: **1579**

Application of: **Hayden**

Group Art Unit: **3733**

Serial No. **10/811,338**

Examiner: **Richard R. Shaffer**

Filed: **March 26, 2004**

For: **Navigated Pin Placement for Orthopaedic Procedures**

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June 11, 2007

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**APPEAL BRIEF**

Sir:

This is an appeal under 37 CFR § 41.31 to the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office from the rejection of the claims 30-49 of the above-identified patent application. These claims were indicated as finally rejected in an Office Action dated December 11, 2006. The \$500.00 fee required under 37 CFR § 41.20(b) (2) is submitted herewith. Also, please provide any extensions

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of time that may be necessary and charge any fees that may be due to Account No. 13-0014, but not to include any payment of issue fees.

**(1) REAL PARTY IN INTEREST**

DePuy Products, Inc. of Warsaw, Indiana is the assignee of this patent application, and the real party in interest.

**(2) RELATED APPEALS AND INTERFERENCES**

There are no appeals or interferences related to this patent application (serial no. 10/811,338).

**(3) STATUS OF CLAIMS**

Claims 1-29 have been canceled.

Claims 30-49 are rejected.

Claims 30-49 are being appealed, and are shown in the Appendix attached to this Appeal Brief.

**(4) STATUS OF AMENDMENTS**

Appellants have filed no amendments after receipt of the December 11, 2006, Office Action (the "Office Action").

## **(5) SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention relates to a system for the navigated placement of bone engaging elements, such as support pins used to support a cutting block on a bone for resection (See, e.g. Appellant's specification at Abstract). In accordance with one non-limiting embodiment, a guide apparatus 100 includes a body 101 that may be mounted to a bone F. (See, e.g. Appellant's specification at page 13, lines 28-29 and FIG. 8). A guide arm 105 is mounted to the body 101 and supports a position adjustment assembly 110. (See, e.g. Appellant's specification at page 14, lines 12-13 and FIG. 8).

The position adjustment assembly 110 includes a gross positioning block 115 that is supported on the guide arm 105. (See, e.g. Appellant's specification at page 16, lines 5-7 and FIG. 10). A fine adjustment mechanism 118 is located between the gross positioning block 115 and a fine adjustment block 117. (See, e.g. Appellant's specification at page 16, lines 14-15 and FIG. 10). Both the gross positioning block 115 and the fine adjustment mechanism 118 permit translation along the axis  $D_1$ . (See, e.g. Appellant's specification at page 16, lines 7-10 and 22-24 and FIGs. 8 and 10).

A second gross positioning block 115' is supported on a support arm 126 that extends from the fine adjustment block 117. (See, e.g. Appellant's specification at page 17, lines 6-8 and FIG. 10). A second fine adjustment mechanism 118' is located between the gross positioning block 115' and a fine adjustment block 117'. (See, e.g. Appellant's specification at page 17, lines 9-11 and FIG. 10). Both the gross positioning block 115' and the fine adjustment mechanism 118' permit translation along the axis  $D_3$ . (See, e.g. Appellant's specification at page 17, lines 11-13 and FIG. 10).

A vertical support arm 128, to which the pin guide 107 is mounted, is slidably mounted within the block 117' for translation along the axis  $D_5$ , which is the axis of the pin guide 107. (See, e.g. Appellant's specification at page 17, lines 15-18 and FIG. 10).

The additional information required by the United States Patent Office is as follows.

Claims 30-49

Claims 30-49 are argued together. Claims 30, 37 and 45 are independent claims.

Claim 30 recites:

A system for accurately guiding placement of a bone engaging element in a bone comprising (see, e.g., Appellant's specification at Abstract):

a guide configured to guide movement of the bone engaging element toward a location on a bone (see, e.g., Appellant's specification at page 18, lines 7-10), said guide having a bore through which said bone engaging element may be advanced (see, e.g., Appellant's specification at page 18, lines 7-10 and FIG. 10), and said bore defining a first longitudinal axis (see, e.g., Appellant's specification at page 18, lines 7-10 and FIG. 10); and

a support apparatus configured to support said guide, said support apparatus including (see, e.g., Appellant's specification at page 13, lines 26-28 and FIG. 8);

a support body mountable to the bone (see, e.g., Appellant's specification at page 13, lines 26-28 and FIG. 8);

an arm extending from said support body (see, e.g., Appellant's specification at page 14, lines 3-5 and FIG. 8); and

a position adjustment assembly supported on said arm (see, e.g., Appellant's specification at page 14, lines 12-13 and FIG. 8), said position adjustment assembly including (i) a first gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said support body along a second longitudinal axis (See, e.g. Appellant's specification at page 16, lines 5-7 and FIG. 10), (ii) a first fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said support body along said second longitudinal axis (See, e.g. Appellant's specification at page 16, lines 14-15 and FIG. 10), (iii) a second gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said support body along a third longitudinal axis (See, e.g. Appellant's specification at page 17, lines 6-8 and FIG. 10), (iv) a second fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said support body along said third longitudinal axis (See, e.g. Appellant's specification at page 17, lines 9-11 and FIG. 10), and (v) a third adjustment mechanism configured to permit adjustment of said guide in relation to said support body along said first longitudinal axis (See, e.g. Appellant's specification at page 17, lines 15-18 and FIG. 10),

wherein said first longitudinal axis is not coincident with said second longitudinal axis (See, e.g. Appellant's specification at FIG. 10),

wherein said first longitudinal axis is not coincident with said third longitudinal axis (See, e.g. Appellant's specification at FIG. 10), and

wherein said second longitudinal axis is not coincident with said third longitudinal axis (See, e.g. Appellant's specification at FIG. 10).

Claim 37 recites:

A guide assembly for a bone engaging element, comprising (see, e.g., Appellant's specification at Abstract):

a guide configured to guide movement of the bone engaging element (see, e.g., Appellant's specification at page 18, lines 7-10), said guide having a bore through which said bone engaging element may be advanced (see, e.g., Appellant's specification at page 18, lines 7-10), and said bore defining a first longitudinal axis (see, e.g., Appellant's specification at page 18, lines 7-10); and

a support apparatus configured to support said guide, said support apparatus including (see, e.g., Appellant's specification at page 13, lines 26-28 and FIG. 8);

a body mountable to a bone (see, e.g., Appellant's specification at page 13, lines 26-28 and FIG. 8);

a first support member extending from said body (see, e.g., Appellant's specification at page 14, lines 3-5 and FIG. 8); and

a position adjustment assembly supported on said first support member (see, e.g., Appellant's specification at page 14, lines 12-13 and FIG. 8), said position adjustment assembly including (i) a first gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said body along a second longitudinal axis (See, e.g. Appellant's specification at page 16, lines 5-7 and FIG. 10), (ii) a first fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said body along said second longitudinal axis (See, e.g. Appellant's specification at page 16, lines 14-15 and FIG. 10), (iii) a second gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said body along a third longitudinal

axis (See, e.g. Appellant's specification at page 17, lines 6-8 and FIG. 10), (iv) a second fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said body along said third longitudinal axis (See, e.g. Appellant's specification at page 17, lines 9-11 and FIG. 10), and (v) a third adjustment mechanism configured to permit adjustment of said guide in relation to said body along said first longitudinal axis (See, e.g. Appellant's specification at page 17, lines 15-18 and FIG. 10),

wherein said first longitudinal axis is not coincident with said second longitudinal axis (See, e.g. Appellant's specification at FIG. 10),

wherein said first longitudinal axis is not coincident with said third longitudinal axis (See, e.g. Appellant's specification at FIG. 10), and

wherein said second longitudinal axis is not coincident with said third longitudinal axis (See, e.g. Appellant's specification at FIG. 10).

Claim 45 recites:

A guide assembly for a bone engaging element, comprising (see, e.g., Appellant's specification at Abstract):

a guide configured to guide movement of the bone engaging element along a first longitudinal axis (see, e.g., Appellant's specification at page 18, lines 7-10); and

a support apparatus configured to support said guide, said support apparatus including (see, e.g., Appellant's specification at page 13, lines 26-28 and FIG. 8);

a body mountable to a bone (see, e.g., Appellant's specification at page 13, lines 26-28 and FIG. 8);

a first support member extending from said body (see, e.g., Appellant's specification at page 14, lines 3-5 and FIG. 8); and

a position adjustment assembly supported on said first support member (see, e.g., Appellant's specification at page 14, lines 12-13 and FIG. 8), said position adjustment assembly including (i) a first gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said body along a second longitudinal axis (See, e.g. Appellant's specification at page 16, lines 5-7 and FIG. 10), (ii) a first fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said body along said second longitudinal axis (See, e.g. Appellant's specification at page 16, lines 14-15 and FIG. 10), (iii) a second gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said body along a third longitudinal axis (See, e.g. Appellant's specification at page 17, lines 6-8 and FIG. 10), (iv) a second fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said body along said third longitudinal axis (See, e.g. Appellant's specification at page 17, lines 9-11 and FIG. 10), and (v) a third adjustment mechanism configured to permit adjustment of said guide in relation to said body along said first longitudinal axis (See, e.g. Appellant's specification at page 17, lines 15-18 and FIG. 10),

wherein said first longitudinal axis is not coincident with said second longitudinal axis (See, e.g. Appellant's specification at FIG. 10),

wherein said first longitudinal axis is not coincident with said third longitudinal axis (See, e.g. Appellant's specification at FIG. 10), and

wherein said second longitudinal axis is not coincident with said third longitudinal axis (See, e.g. Appellant's specification at FIG. 10).



## (6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 30-49 stand rejected as being anticipated under 35 U.S.C. §102(b) by U.S. Patent No. 5,228,459 to Caspari et al. (hereinafter “Caspari”).

## (7) ARGUMENT

### Claims 30-49 Are Not Anticipated by Caspari

Claims 30-49 stand rejected under 35 U.S.C. §102(b) as being anticipated by Caspari. (Office Action at page 3). Caspari does not teach or disclose each element of the claims. Therefore, the rejections should be overturned.

### *Discussion re: Patentability of Claim 30*

#### 1. Claim 30

Claim 30 recites the following:

A system for accurately guiding placement of a bone engaging element in a bone comprising:

- a guide configured to guide movement of the bone engaging element toward a location on a bone, said guide having a bore through which said bone engaging element may be advanced, and said bore defining a first longitudinal axis; and
- a support apparatus configured to support said guide, said support apparatus including:
  - a support body mountable to the bone;
  - an arm extending from said support body; and
  - a position adjustment assembly supported on said arm, said position adjustment assembly including (i) a first gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said support body along a second longitudinal axis, (ii) a first fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said support body along said second longitudinal axis, (iii) a second gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said support body along a third longitudinal axis, (iv) a second fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said support body along said third longitudinal axis, and (v) a third adjustment mechanism configured to permit adjustment of said guide in relation to said support body along said first longitudinal axis,

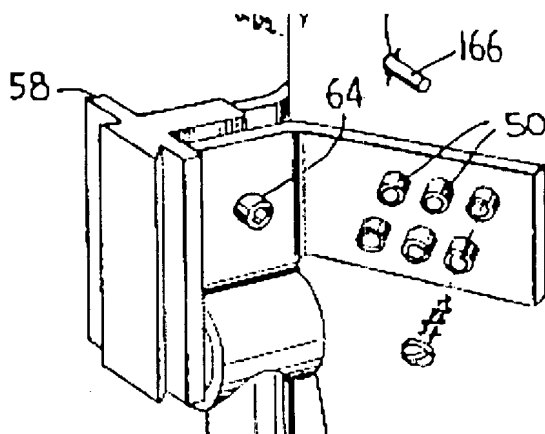
wherein said first longitudinal axis is not coincident with said second longitudinal axis, wherein said first longitudinal axis is not coincident with said third longitudinal axis, and wherein said second longitudinal axis is not coincident with said third longitudinal axis.

Accordingly, claim 30 recites two pairs of components, each pair including a gross adjustment mechanism and a fine adjustment mechanism configured to permit movement of the guide in relation to the support body along the same longitudinal axis. The claim further recites a total of three adjust mechanisms, one of which adjusts the guide along the axis of a bore through which a bone engaging element may be advanced.

2. The V-Block Pin Holes of Caspari Are Not Movable

The Examiner has alleged that Caspari discloses a position adjustment assembly that moves a guide with respect to a support body as recited in claim 30. (Office Action at page 3). The Examiner has mischaracterized Caspari.

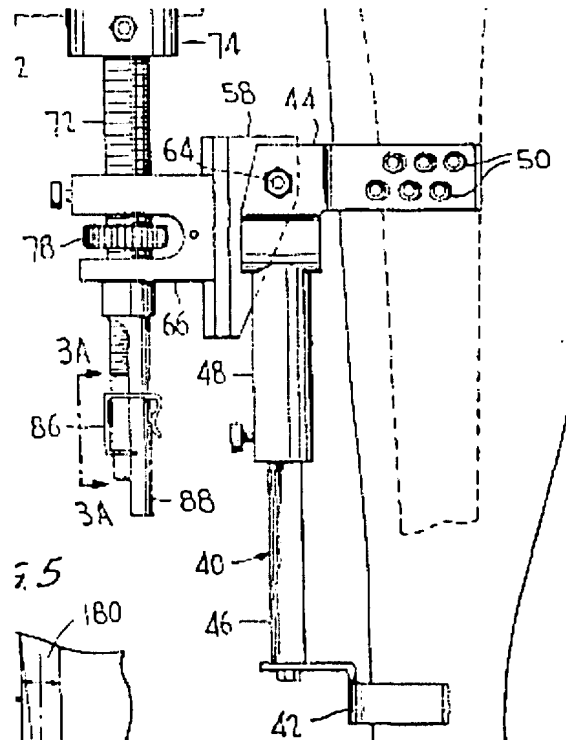
Specifically, the Examiner alleges that the holes 50 in the V-block 44 are pin guides and that the lower V-block 42 is a support body, while the adjustment member 58 is the “second gross positioning block” and the adjusting block 66 is the “second fine adjustment block.” As shown in FIG. 1, a portion of which is set forth below, the holes 50 are used to attach the V-block 44 to a patient.



(See also Caspari at column 4, lines 29-34). Thus, the V-block 44 is used to securely anchor the device of Caspari to a patient. (Caspari at column 5, line 67 through column

6, line 5). Thereafter, the device of Caspari is assembled to the condition shown in FIG.

3. (Caspari at column 6, lines 10-15). As shown in FIG. 3, a portion of which is set forth below, the V-block 42 is positioned just above the ankle and the telescoping members 46 and 48 are maintained in position with a set screw 163. (Caspari at column 6, lines 1-5).



Consequently, rotation of the thumbwheel 78 causes longitudinal axial movement of the screw 72 and the head 74. (Caspari at column 4, lines 47-51). Additionally, the adjustment member 58 is connected to the V-block 44 with a screw 64 which allows the adjustment member 58 to pivot about the screw 64. (Caspari at column 4, lines 34-43). The V-block 42 and the V-block 44, however, do not move.

Additionally, the movement provided by the adjustment member 58 is a rotational movement about an axis defined by the screw 64. The movement of the adjustment block 66, however, is linear movement along the axis defined by the screw 72. Therefore, the two components provide movement with respect to different axes. Moreover, the

rotation of the adjustment member 58 is not movement *along* the axis defined by the screw 64.

Therefore, because the adjustment member 58 and the adjusting block 66 do not move the V-block 42 with respect to the V-block 44, and because the movement provided by the adjustment member 58 and the adjusting block 66 are not along the same axis as required by the claim, the adjustment member 58 and the adjusting block 66 cannot be a second gross positioning block and a second fine adjustment block as alleged by the Examiner.

3. The Examiner Has Not Alleged Each Element of Claim 30

Moreover, claim 30 recites, in addition to a first and second gross adjustment mechanism, a third adjustment mechanism for adjusting the guide along the axis of a bore through which a bone engaging element may be advanced. The Examiner has failed to even allege that Caspari discloses such a mechanism.

4. Conclusion

It is axiomatic that anticipation of a claim under 35 U.S.C. § 102 is proper only if the prior art reference discloses each and every element of the claim. Since Caspari does not disclose a gross adjustment mechanism and a fine adjustment mechanism configured to permit movement of the guide in relation to the support body along the same longitudinal axis or a total of three adjust mechanisms, one of which adjusts the guide along the axis of a bore through which a bone engaging element may be advanced as recited in Appellant's claim 30, Caspari does not anticipate Appellant's claim 30.

Accordingly, the Board of Appeals is respectfully requested to overturn the rejection of claim 30.

*Discussion re: Patentability of Claims 31-49*

Claims 31-35 depend, either directly or by way of an intermediate claim, from claim 30 and incorporate all the limitations of claim 30. Accordingly, claims 31-35 are patentable over the prior art for at least the same reasons as those set forth above in connection with claim 30.

Claims 37 and 45 are independent claims. Each of these claims recites limitations which, for purposes of this appeal, are the same as the limitations discussed above with respect to claim 30. Claims 38-39 and 41-44 depend, either directly or by way of an intermediate claim, from claim 37 and incorporate all of the limitations of claim 37. Claims 46 and 48-49 depend, either directly or by way of an intermediate claim, from claim 45 and incorporate all of the limitations of claim 45. Therefore, for at least the same reasons set forth above with respect to the patentability of claim 30 over Caspari, claims 30-35, 37-39, 41-46 and 48-49 are patentable over Caspari and the Board of Appeals is respectfully requested to reverse the rejections of claims 30-35, 37-39, 41-46 and 48-49.

**CONCLUSION**

Claims 30-49 are not anticipated by Caspari. Accordingly, the Board of Appeals is respectfully requested to reverse the rejections of claims 30-49.

Respectfully submitted,

MAGINOT, MOORE & BECK LLP

/James D. Wood/

James D. Wood  
Attorney for Appellant  
Registration No. 43,285

June 11, 2007  
Maginot, Moore & Beck LLP  
Chase Tower  
111 Monument Circle, Suite 3250  
Indianapolis, Indiana 46204-5115  
Telephone (317) 638-2922

**(8) CLAIMS APPENDIX**

Claim 30. A system for accurately guiding placement of a bone engaging element in a bone comprising:

a guide configured to guide movement of the bone engaging element toward a location on a bone, said guide having a bore through which said bone engaging element may be advanced, and said bore defining a first longitudinal axis; and

a support apparatus configured to support said guide, said support apparatus including;

a support body mountable to the bone;

an arm extending from said support body; and

a position adjustment assembly supported on said arm, said position adjustment assembly including (i) a first gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said support body along a second longitudinal axis, (ii) a first fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said support body along said second longitudinal axis, (iii) a second gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said support body along a third longitudinal axis, (iv) a second fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said support body along said third longitudinal axis, and (v) a third adjustment mechanism configured to permit adjustment of said guide in relation to said support body along said first longitudinal axis,

wherein said first longitudinal axis is not coincident with said second longitudinal axis,

wherein said first longitudinal axis is not coincident with said third longitudinal axis, and

wherein said second longitudinal axis is not coincident with said third longitudinal axis.

Claim 31. The system of claim 30, wherein said guide is a pin guide and the bone engaging element is a pin configured to be placed in bone.

Claim 32. The system of claim 30, wherein said position adjustment assembly includes:

a first positioning block movably mounted on said arm; and

a second positioning block movably supported on said first positioning block.

Claim 33. The system of claim 32, wherein:

one of said first positioning block and said second positioning block includes a dovetailed recess, and

the other of said first positioning block and said second positioning block includes a dovetailed member positioned within said dovetailed recess.

Claim 34. The system of claim 30, wherein said first fine adjustment mechanism includes:

a rack gear mounted to one of said first positioning block and said second positioning block; and



a thumbwheel gear configured to mesh with said rack gear and mounted to the other of said first positioning block and said second positioning block.

Claim 35. The system of claim 32, wherein said position adjustment assembly further includes:

- a first support member extending from said second positioning block;
- a third positioning block movably mounted on said first support member; and
- a fourth block movably supported on said third positioning block.

Claim 36. The system of claim 35, wherein said position adjustment assembly includes a second support member connected to said fourth positioning block, and wherein said guide is connected to said second support member.

Claim 37. A guide assembly for a bone engaging element, comprising:

a guide configured to guide movement of the bone engaging element, said guide having a bore through which said bone engaging element may be advanced, and said bore defining a first longitudinal axis; and

a support apparatus configured to support said guide, said support apparatus including;

- a body mountable to a bone;
- a first support member extending from said body; and
- a position adjustment assembly supported on said first support member, said position adjustment assembly including (i) a first gross adjustment mechanism

configured to permit gross adjustment of said guide in relation to said body along a second longitudinal axis, (ii) a first fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said body along said second longitudinal axis, (iii) a second gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said body along a third longitudinal axis, (iv) a second fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said body along said third longitudinal axis, and (v) a third adjustment mechanism configured to permit adjustment of said guide in relation to said body along said first longitudinal axis,

wherein said first longitudinal axis is not coincident with said second longitudinal axis,

wherein said first longitudinal axis is not coincident with said third longitudinal axis, and

wherein said second longitudinal axis is not coincident with said third longitudinal axis.

Claim 38. The system of claim 37, wherein said position adjustment assembly includes:

a first positioning block movably mounted on said first support member; and  
a second positioning block movably supported on said first positioning block.

Claim 39. The system of claim 38, wherein said position adjustment assembly further includes:

- a second support member extending from said second positioning block;
- a third positioning block movably mounted on said second support member; and
- a fourth block movably supported on said third positioning block.

Claim 40. The system of claim 39, wherein:

- said position adjustment assembly further includes a third support member connected to said fourth positioning block, and
- said guide is connected to said third support member.

Claim 41. The system of claim 37, wherein said first fine adjustment mechanism includes:

- a first rack gear mounted to one of said first positioning block and said second positioning block; and
- a first thumbwheel gear configured to mesh with said first rack gear and mounted to the other of said first positioning block and said second positioning block.

Claim 42. The system of claim 41, wherein said second fine adjustment mechanism includes:

- a second rack gear mounted to one of said third positioning block and said fourth positioning block; and

a second thumbwheel gear configured to mesh with said second rack gear and mounted to the other of said third positioning block and said fourth positioning block.

Claim 43. The system of claim 39, wherein:

one of said first positioning block and said second positioning block includes a first dovetailed recess, and

the other of said first positioning block and said second positioning block includes a first dovetailed member positioned within said first dovetailed recess.

Claim 44. The system of claim 43, wherein:

one of said third positioning block and said fourth positioning block includes a second dovetailed recess, and

the other of said third positioning block and said fourth positioning block includes a second dovetailed member positioned within said second dovetailed recess.

Claim 45. A guide assembly for a bone engaging element, comprising:

a guide configured to guide movement of the bone engaging element along a first longitudinal axis; and

a support apparatus configured to support said guide, said support apparatus including;

a body mountable to a bone;

a first support member extending from said body; and

a position adjustment assembly supported on said first support member, said position adjustment assembly including (i) a first gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said body along a second longitudinal axis, (ii) a first fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said body along said second longitudinal axis, (iii) a second gross adjustment mechanism configured to permit gross adjustment of said guide in relation to said body along a third longitudinal axis, (iv) a second fine adjustment mechanism configured to permit fine adjustment of said guide in relation to said body along said third longitudinal axis, and (v) a third adjustment mechanism configured to permit adjustment of said guide in relation to said body along said first longitudinal axis,

wherein said first longitudinal axis is not coincident with said second longitudinal axis,

wherein said first longitudinal axis is not coincident with said third longitudinal axis, and

wherein said second longitudinal axis is not coincident with said third longitudinal axis.

Claim 46. The system of claim 45, wherein said position adjustment assembly includes:

- a first positioning block movably mounted on said first support member;
- a second positioning block movably supported on said first positioning block;
- a second support member extending from said second positioning block;

a third positioning block movably mounted on said second support member; and  
a fourth block movably supported on said third positioning block.

Claim 47. The system of claim 46, wherein:

said position adjustment assembly further includes a third support member  
connected to said fourth positioning block, and  
said guide is connected to said third support member.

Claim 48. The system of claim 47, wherein:

said first fine adjustment mechanism includes (i) a first rack gear mounted to one  
of said first positioning block and said second positioning block, and (ii) a first  
thumbwheel gear configured to mesh with said first rack gear and mounted to the other of  
said first positioning block and said second positioning block, and

said second fine adjustment mechanism includes (i) a second rack gear mounted  
to one of said third positioning block and said fourth positioning block, and (ii) a second  
thumbwheel gear configured to mesh with said second rack gear and mounted to the  
other of said third positioning block and said fourth positioning block.

Claim 49. The system of claim 48, wherein:

one of said first positioning block and said second positioning block includes a  
first dovetailed recess,

the other of said first positioning block and said second positioning block includes  
a first dovetailed member positioned within said first dovetailed recess,

one of said third positioning block and said fourth positioning block includes a second dovetailed recess, and

the other of said third positioning block and said fourth positioning block includes a second dovetailed member positioned within said second dovetailed recess.

**(9) EVIDENCE APPENDIX**

None.



**(10) RELATED PROCEEDINGS APPENDIX**

None.